PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-310095

(43)Date of publication of application : 06.11.2001

(51)Int.CI. D06F 7/04

B06B 1/02

B06B 1/06

B08B 3/12

H01L 41/09

H01L 41/187

(21)Application number : 2000-131113

(22)Date of filing : 28.04.2000

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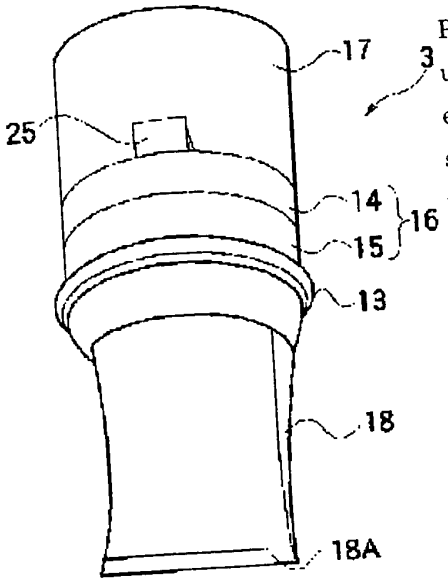
(54) ULTRASONIC CLEANING DEVICE



(57)Abstract:

PROBLEM TO BE SOLVED: To provide an ultrasonic cleaning device of a small size and low electric power consumption which is capable of sufficiently exhibiting the effect of ultrasonic vibration and is capable of easily cleaning stained clothing, or the like, in general home.

SOLUTION: This ultrasonic cleaning device has an ultrasonic vibration section 3 constituted by successively providing an ultrasonic vibrator transducer 16 using piezoelectric substances 14 and 15 with a rear ultrasonic horn 17 and a front ultrasonic horn 18. The electric power consumption of the ultrasonic vibrator transducer 16 is set at ≤8 W and the area S1 of the surface to be joined to the front ultrasonic horn 18 of the piezoelectric substance 15 is specified to ≤3.14 cm2 and the area S2 of the front end face 18A to a range of 20 mm2≤S2≤140 mm2. The ultrasonic cleaning device of the small size and the low electric power consumption which is capable of sufficiently exhibiting the effect of the ultrasonic vibration and is capable of easily cleaning the stained clothing, or the like, in the general home is realized by such constitution.

LEGAL STATUS

[Date of request for examination] 01.08.2001

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] A pars-anterior ultrasonic-wave horn is joined to the ultrasonic-vibrator front side using the piezo electric crystal. And it has the supersonic-oscillation section which comes to join a posterior-part ultrasonic-wave horn to the backside [the aforementioned ultrasonic vibrator]. It is the ultrasonic cleaner which a washed object is contacted to the point of the aforementioned ultrasonic horn, and washes a washed object. The ultrasonic cleaner characterized by for the apical surface of the aforementioned pars-anterior ultrasonic-wave horn being an abbreviation flat surface, and for the aforementioned apical surface having axial-ratio R, and setting the axial-ratio R as the domain of 3<=R<=10.

[Claim 2] The ultrasonic cleaner according to claim 1 which the apical surface of the

aforementioned pars-anterior ultrasonic-wave horn is a rectangle-like, and is characterized by setting the axial ratio (a/b) of length b of length a of the long side, and a shorter side in the aforementioned apical surface as the domain of 3 <=(a/b) <=10.

[Claim 3] The ultrasonic cleaner according to claim 1 which the apical surface of the aforementioned pars-anterior ultrasonic-wave horn is elliptical, and is characterized by setting the axial ratio (a/b) of length b of length a of a major axis, and a minor axis in the aforementioned apical surface as the domain of 3 <=(a/b) <=10.

[Claim 4] The ultrasonic cleaner according to claim 1 to 3 characterized by for the area S1 of the field joined to the aforementioned pars-anterior ultrasonic-wave horn in the aforementioned piezo electric crystal being two or less [3.14cm], and the area S2 of the aforementioned apical surface of the aforementioned pars-anterior ultrasonic-wave horn being 2 2<=140mm of 20mm2 <=S while the power consumption of the aforementioned ultrasonic vibrator is set as less than [8W].

[Claim 5] The major axis of the aforementioned apical surface of the aforementioned pars-anterior ultrasonic-wave horn or the length dimension of the long side is a ultrasonic cleaner according to claim 4 characterized by being set to the major axis of the aforementioned piezo electric crystal joined to the aforementioned pars-anterior ultrasonic-wave horn, or below the length dimension of the long side.

[Claim 6] The aforementioned ultrasonic vibrator is a ultrasonic cleaner according to claim 1 to 5 which is a lingerie van type ultrasonic vibrator.

[Translation done.]